

# Algae Program – Strains and Cultivation Session

## Day 2 Introduction

Daniel Fishman, Technology Manager

April 4, 2023



Feedstock



Algae



Conversion



Systems



Data



# Renewable Carbon Resources (RCR) – Algae Team



**Nichole Fitzgerald**  
Program Manager



**Dan Fishman**  
Technology Manager



**Christy Sterner**  
Technology Manager



**Liz Burrows**  
Technology Manager



**Annie Otwell**  
AAAS Fellow



**Jamie Meadows**  
Project Monitor



**Phil Lee**  
Project Monitor



**Frank Fields**  
Project Monitor



**Ty Robinson**  
Business Support

# Reviewer Introductions: Cultivation and Strains

- Lead reviewer: Dr. Tyler Johannes, Professor at University of Tulsa
- Dr. Ify Iwuchukwu, Director, Pilot Plant at Oxford Biomedica Solutions, LLC
- Dr. Kalyani Maitra, Associate Professor at Fresno State University
- Dr. Laura Carney, Former Director of Ag Sciencee at Heliae



**THANK YOU, REVIEWERS!**

# Agenda overview for BETO

**Panel A = Cultivation and Strains, Panel B = Integration**

		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
Monday		Plenaries							
	Morning								
	Afternoon	Algae A	Algae B	FT	DMA	ABF	SDI A	SDI B	PABP
Tuesday									
	Morning	Algae A	Algae B	FT	DMA	ABF	SDI A	SDI B	PABP
	Afternoon	Algae A	Algae B	FT	DMA	ABF	SDI A	SDI B	PABP
Wednesday									
	Morning			FT	DMA	ABF	SDI A	SDI B	PABP
	Afternoon			FT	DMA	ABF	SDI A	SDI B	PABP
Thursday	Plenary	Plenaries							
	Morning								
	Afternoon	OW	FCIC			CO2	BC/Lignin	CatUp	PABP
	Afternoon	OW	FCIC			CO2	BC/Lignin	CatUp	PABP
Friday									
	Morning	OW				CO2	BC/Lignin	CatUp	
	Afternoon						BC/Lignin	CatUp	

**Algae Session: 32 projects**

# Algae session themes at a glance

**Monday 4/3/23**

Plenary

**Tuesday 4/4/23**

Cultivation and  
Strains

Integration

**Lunch!**

Cultivation and  
Strains

Integration

Cultivation and  
Strains

Integration



# Day 2 Integration Projects

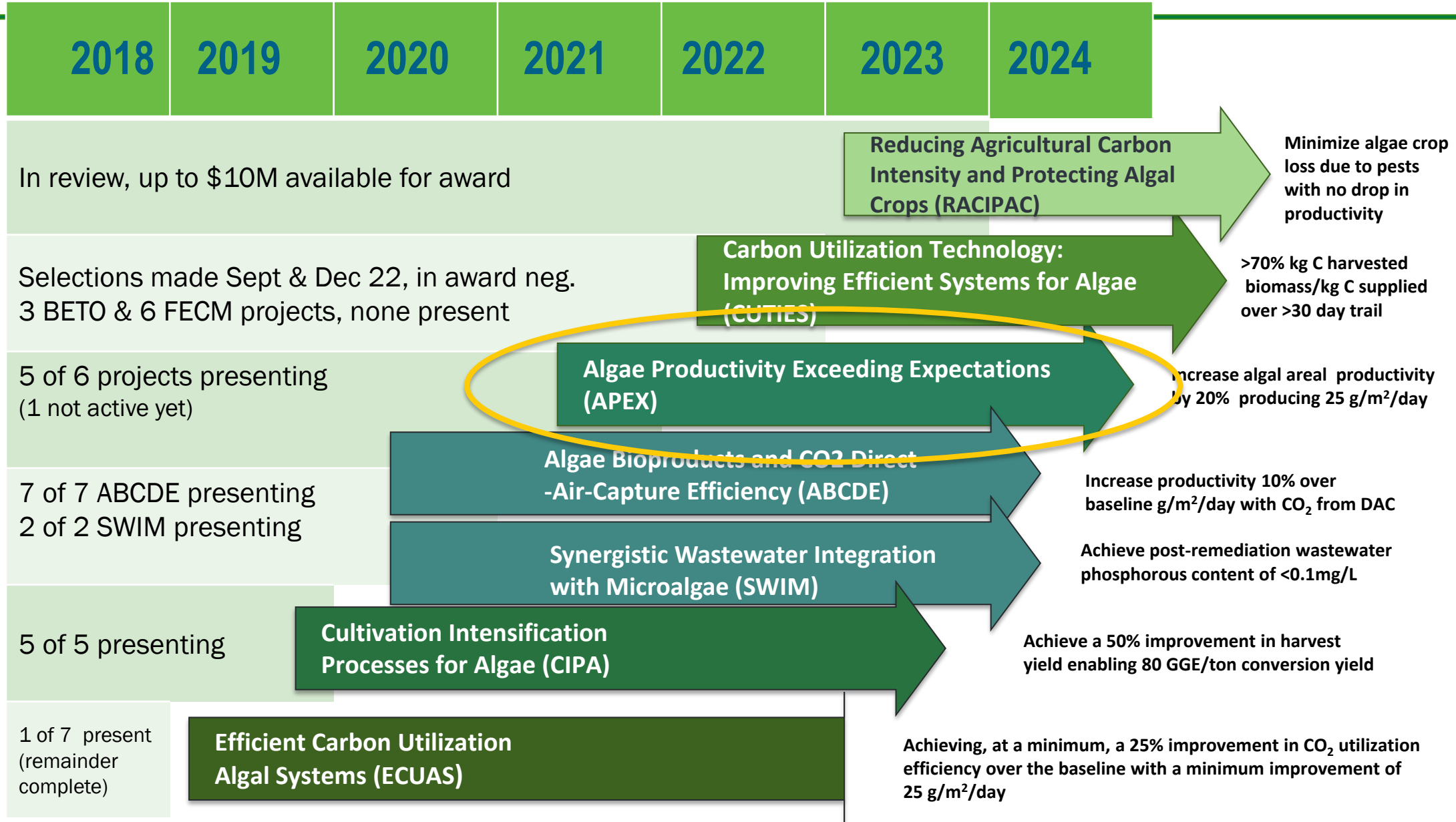
## ADVANCED ALGAL SYSTEMS CULTIVATION AND STRAIN DEVELOPMENT

**DAY 2** – TUESDAY APRIL 4, 2023

Start Time (MT)	End Time (MT)	Title	Organization	Speaker
8:30 AM	8:45 AM	Technology Area Daily Intro	BETO	
8:45 AM	9:15 AM	Algae DISCOVER	PNNL, LANL, SNL, NREL, ASU	Michael Huesemann
9:15 AM	9:45 AM	Algae DISCOVER	PNNL, LANL, SNL, NREL, ASU	Michael Huesemann
9:45 AM	10:00 AM	Algae DISCOVER	PNNL, LANL, SNL, NREL, ASU	Michael Huesemann
10:00 AM	10:30 AM	Break	All	
10:30 AM	11:00 AM	Broad Spectrum Antifungal Pond Protection	SNL	Todd Lane
11:00 AM	11:30 AM	Ecological monitoring technologies to enhance large-scale microalgae cultivation, stability, and productivity EE0009673	Scripps Institution of Oceanography at the University of California, San Diego	Lisa Zeigler
11:30 AM	12:00 PM	Hold for any conflicts; longer break if not needed		
12:00 PM	1:00 PM	Lunch	All	

1:00 PM	1:30 PM	Advancing Algal Productivity through Innovation in Cultivation Operation and Strain Traits (ADAPT-COST) EE0009672	Colorado State University	Ken Reardon
1:30 PM	2:00 PM	Enhanced production of algae lipids and carbohydrates for fuel and polyurethane precursors EE0009671	University of California: San Diego	Stephen Mayfield
2:00 PM	2:30 PM	Direct Air Capture Integration with Algae Carbon Biocatalysis EE0009674	Arizona State University	John McGowen
2:30 PM	3:00 PM	Enhanced algae productivity in CO2 direct air capture cultivation EE0009675	Global Algae Innovations	Dave Hazlebeck
3:00 PM	3:20 PM	Break	All	
3:20 PM	3:50 PM	Microalgae Analysis	PNNL	Andre Coleman
3:50 PM	4:20 PM	Life-Cycle Analysis	ANL	Troy Hawkins
4:20 PM	4:30 PM	Adjourn	All	
4:30 PM	5:00 PM	Closed Door Comment Review Session	Reviewers	

# Funding Opportunity Announcements



# Algae Productivity Exceeding Expectations (APEX)

**FY2021: DE-FOA-0002423**

**Objective** - To develop and test strain and cultivation technologies that advance the state-of-the-art for algal areal productivity, and biomass quality achievable in industrially relevant cultivation systems.

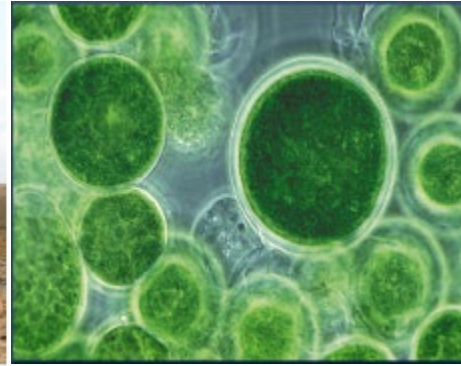
- Topic Area 1: Improvements in productivity with traditional carbon dioxide (CO<sub>2</sub>) supply
- Topic Area 2: Improvements in productivity with Direct Air Capture (DAC) of CO<sub>2</sub> from ambient air



Federal \$\$ Per Award	Total Federal Funding	Award Duration	Cost Share (%)
\$2.5M - \$3.2M	\$20M	3 years	20%



# Advancing the Regional Feedstock Partnership



**Save the date!**  
June 6-7, 2023  
Kansas City, MO

Purpose-grown energy crops will play an important role in meeting the 2050 SAF volumetric goals

Workshop to develop the vision for a next iteration of the RFP  
Share ideas, find collaborators, shape the vision of this important initiative!

# Thank you!

